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EXAMINER

LOPEZ, CARLOS N

ART UNIT

PAPER NUMBER

1731

DATE MAILED: 04/10/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/769,672

Applicant(s)

ROMER ET AL.

Examiner

Carlos Lopez

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) 4,8,9,12 and 20 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3,5-7,10,11,13-15 and 17-19 is/are rejected.
- 7) ☒ Claim(s) 4,8,9,12,16 and 20 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

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***Claim Objections***

Claims 4, 8-9, 12,16, and 20 are objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim should refer to other claims in the alternative only. See MPEP § 608.01(n). Accordingly, claims 4, 8-9, 12,16, and 20 are not been further treated on the merits.

Claim 13 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claim 13, dependant on claim 5, recites verbatim the claimed polyvalent ions of claim 5.

***Specification***

The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: Claims 1-3, 5, 7, 10-11,13, and 18-19 recite terms lacking proper antecedent basis such as claimed wt percentage of the polyvalent ions in claim 1, the claimed temperature range of claim 2, cooled skull crucible in claim 7 and 18-19.

***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-3, 5-7,10-11,13-15, and 17-19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The pending claims

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lack a preamble rendering the claims indefinite for failing to particularly point out and distinctly claim what applicant regards as the claimed subject matter. It appears that Claim 1 is intended to be a Jepson claim, if this is the case it should be written in proper Jepson format.

The claims are generally narrative and indefinite, failing to conform with current U.S. practice.

In claim 5, 10, 11 and 13, there exist a plurality of ions, to a degree that one can not ascertain what it is included or excluded by the term "ion".

The term "high frequency energy" in claims 7, 18 and 19 is a relative term which renders the claim indefinite. The term "high frequency energy" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably appraised of the scope of the invention. The specification does not disclose any frequency to ascertain what applicant considers as high frequency energy. It is also in what stage does the steps of claim 7 occur. Is the heating step of claim 7 occur at the melting, refining, homogenizing, or conditioning stage?

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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Claims 1,5,6,13 and 17 are rejected under 35 U.S.C. 102(b) as being anticipated by Hummel (US 3,856,497). Hummel discloses a method of making crystallized glass that is free from micro cracking (Abstract). As taught by Hummel a glass batch is usually melted, fined, homogenized and pressed in to plates (considered as the claimed conditioning stage) (Column 1, line 39-40). Hummel's Table in Column 2 shows a glass batch composition having titanium concentration of 1.2-2.4 wt %. In column 6, line 47 the glass batch is melted at 1760°C.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-3,7,10-11, and 13-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lythgoe et al (US 4,082,528) in view of Hummel (US 3,856,497). Lythgoe discloses a method of melting and refining glass (Column 1, lines 8-11). Lythgoe discloses that molten glass is created by passing melting glass raw material through a melting zone (reading on Applicant's claimed melting stage) at one end of the tank supplied with electrical heating devices (Column 1, lines 20-25). The molten glass is then passed to a refining zone (reading on Applicant's claimed refining stage) where bubbles in the glass are removed (Column 1, lines 27-29). After the passing the molten glass through the refining stage it is then passed to a conditioning stage where the

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molten glass is homogenized (reading on Applicant's claimed homogenizing and conditioning stage) (Column 1, lines 31-35). Lythgoe is silent disclosing polyvalent ion as part of the glass raw material. However, as taught by Hummel, conventional glass batch have polyvalent ions such as Titanium in the range of 1.2-2.4 wt % (Note table in Column 2 of Hummel). Therefore, absent any teaching away by Lythgoe, at the time the invention was made, it would have been obvious to one of ordinary skill in the art to have be expected that Lythgoe's glass batch of raw materials, that are formed into molten glass, would use conventional glass batch containing titanium in the claimed ranged as taught by Hummel.

As for claims 2-3, Lythgoe teaches that the time necessary for satisfactory refining of the glass melt would be dependent on the temperature at which refining is carried out (Column 2, lines 53-55). Thus for the production of silica glass the refining would occur at a temperature of at least 1460°C (Column 2, lines 53-68) which is deemed as reading on applicant's claimed ranges recited in instant claims 2-3.

As for claims 6, 14-15 and 17, Hummel's glass raw material does not include any toxic refining agents and thus when the raw materials are melted it would result in molten glass melt free of toxic refining agents which would meet applicant's claimed limitation.

Claims 7 and 18-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lythgoe et al (US 4,082,528) in view of Hummel (US 3,856,497) as applied to claims 1-3, 7, 10-11, and 13-17 above and in further view of Matesa (US 4,780,121). Lythgoe and Hummel are silent disclosing heating the glass melt by means of high

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frequency energy and in a cooled skull crucible. However, as taught by Matesa, providing an intermediate inducting heating stage between the melting stage and refining stage allows for little or no heating in the refining stage (Abstract and Column 2 lines 28-42). The heating stage is performed by vessel having induction coils 32 for high frequency energy heating (Column 5, lines 66-68) and as noted in Matesa abstract it would be heating in a "cold" walled vessel (reading on applicant's cooled skull crucible). Matesa additionally teaches that providing inductive heating reduces production cost (Column 6, lines 12-16). At the time the invention was made it would have been obvious to one of ordinary skill in the art to have modified Hummel's glass melt production with an intermediate heating stage having high frequency energy as taught by Matesa in order to reduce production cost.

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. References cited in PTO-892 in pages 1-2, except reference A-C in Page 1, are cited to show the state of the art.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Carlos Lopez whose telephone number is (703) 605-1174. The examiner can normally be reached on Mon.-Fri. 8am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Griffin can be reached on (703) 308-1164. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-7718 for regular communications and (703) 305-3599 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0651.

  
STEVEN P. GRIFFIN

SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 1700

C.L

April 2, 2003